Original Article

A Look into Colostomy in Pediatric Patients Presented To Al Ribat University Hospital December 2013-December 2014

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Abstract

Background: Colostomy is a very common procedure in pediatric pts. It has a lot of indications and complications.

Objectives: 1) To observe the frequency of indications complications of colostomies between patients done in Al- Ribat university hospital and other patients done in other hospitals who presented there for definitive procedure. 2) To determine the final outcome of colostomy in pediatric patients.

Materials and Methods: Observational prospective study, performed in patients presented to Al Ribat university hospital including patients admitted for colostomy or for final treatment in the period between December 2013 and December 2014.The stoma related complications were tested using Chi-square. The level of significance was taken as $p<0.05$.

Results: There were 50 patients with the peak age group of 4 years (range: 10 days to 8 years). The male percentage was 70% and female 30%. The indications of colostomy were HSD 29 (58 %,) anorectal malformations 19 (38%), rectal injury 1 (2%) and anal malignancy 1 (2%).Complications occurred in 24 patients (48%) of the studied sample. The commonest complication was prolapse 7(29, 2%) followed by stenosis 5(20.8%). Complications were higher in patients operated as an elective cases in compare to emergency operations (51.8% vs. 43,5), and patients operated by registrars in comparison to other surgical operating levels, and in transverse colostomy in comparison to sigmoid colostomy(57,1% vs 46,5%), and in loop colostomy in comparison to divided colostomy (51,2% vs 33,3%), but all these results were statistically not significant. One mortality case was reported during this study (2%).

Conclusion: colostomy being a common procedure in pediatrics with high rates of serious complications deserves special attention for a better outcome.

Key words: colostomy, complications, Hirschsprungs disease, anorectal malformations.

Colostomy is a very common part in the management of wide range of congenital and acquired gastrointestinal conditions in pediatrics. HSD and anorectal malformations are amongst the major indications of colostomy in neonates and infants and children. It is done basically for diversion of fecal stream, waiting for the definitive procedure to be done. It is almost always a temporary procedure in compare to adult indications which can be permanent for malignant diseases. Colostomy can be divided into loop or divided, sigmoid or transverse. In spite of being a temporary procedure, there are serious complications that can occur from improper technique and follow up care. When colostomy is incorrectly constructed, it can complicate or delay the management of these malformations and even can lead to death. A variety of complications with relatively high incidence have been reported. Even with careful technique, there is marked morbidity and mortality associated with the construction of colostomy. Despite this procedure being done commonly in pediatric age groups, few studies have been reported in local as well as in western literature on this issue.

In Sudan, there are little studies about the commonest indications of colostomy. Also, there are no clear rules about the constructional techniques of colostomy, regarding its type (sigmoid or transverse) or its mode (loops or divided). Also no clear

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correlation between the incidence of complications and other factors related to level of operator or urgency of construction or prolong age of colostomy within the childe body…etc. This study is focusing on these issues, especially the complications and its outcome, hoping that we can provide away to decrease the incidence of this growing problem for a better life of children, and their families.

MATERIALS AND METHODS:

This is a prospective observational study, of all patients presenting to al ribat hospital for constructing colostomy or for final treatment, between December 2013 and December 2014. The hospital is a tertiary hospital with a capacity of 20 beds in the pediatric surgery department. The department has 3 consultants. In all the selected cases, a detailed and focused history and examination were done .The stoma site and type differed according to the preference of the operator. Colostomies were constructed by consultants, specialists and registrars. For sigmoid loop colostomy, the colon was brought out as a loop and prevented from retracting using nasogastric tube size 8 as a bridge and removed in most cases after 48 hours. For transverse colostomy, the same technique applied in the right hypochondrial area. Additional informations was taken from the operation sheet about the type of anastomosis and suture materials used intraoperative and duration of postoperative fasting. All patients received antibiotics for different periods. All patients were checked again after 2 month either in the clinic or by telephone for further complications. Verbal consent obtained from all patients relatives, data collected in questionnaire forms.

Analysis obtained using SPSS package version 20 and by applying Chi-square test, the level of statically significance were p<0, 05.Results expressed in tables and graphs.

RESULTS:

Fifty patients were studied in the study. Residence of these children was as follows: center of Sudan 30pts (60%), north of Sudan 7 pts (14%), west of Sudan 7 pts (14%), east of Sudan 3pts (6%), south of Sudan 3 pts (6%). Boys were 35 (70%), girls were 15(30%).The commonest age group was 4 years (n=6; 12%).

The most common indication of performing colostomy was Hirschsprungs disease HSD in 29 pts (58%). Anorectal malformations ARM are the causative factors in19 pts (38%). Other causes include, perianal malignancy in 1 pt (2%), traumatic rectal injury in 1 pt (2%). Number of colostomies done in Al ribat hospital was 31 (62%), while the number of colostomies done elsewhere were 19 (38%). Number of complicated colostomies was 24 pts (48%).The type of colostomy was sigmoid in 43 patients, complications occurred in 20 of them. Right transverse colostomy performed in 7 patients, complications occurred in 4 patients (57, 1%). The ratio of complications between these two categories was (46.5% vs 57.1%) with a p-value =0.602. Mode of colostomy was loop in 41 patients; complications occurred in 21. Divided colostomy done in 9 patients, complications happened in 3 of them. The ratio of complications between these two categories was (51.2 % vs 33.3%) with a p-value=0.331. The time of occurrence of complications was classified into groups. Those occurred within 1 month were 3 cases (12.5%). Those occurred between: 1 month -1year were 10 cases (41.7%). Those occurred after 1 year was 11 cases (45.8%).

The total number of colostomies that underwent refashioning was 22(91.7%).The other 2 (8.3%) complicated colostomies were observed in the referral clinic & there were no need for re- fashioning. Number of colostomies done as emergency was 31 (62%). Number of colostomies done in the elective list was 19 (38%).

The surgical staff that performed the colostomy was also classified into groups; consultant operated 9, cases complications observed in 4 patients. Specialist operated 18 cases & complications observed in 8patients. Registrars operated the rest of cases 23 & complications observed in 12cases.The ratio of complications was high in registrars

(52,1%) in comparison to specialist and consultants (44,4% for each). P-value= 0.862.

Colostomies were complicated by stenosis occurred in 5 patients (20,8%), Prolapse observed in 7 patients, (29,2%), retraction occurred in 3 patients (12,5%) (Table 1).

Table (1): The type of Complications.

	Frequency	Percent
Stenosis	5	20.8
Hernia	1	4.2
Colostomy in aganglionic segment	1	4.2
Prolapse	7	29.2
Wound infection	3	12.5
Nec	1	4.2
Retraction	3	12.5
Faecaloma	1	4.2
I.o.	1	4.2
Death	1	4.2
Total	24	100.0

Unfortunately, colostomy was done in aganglionic segment in 1 patient and death occurred in 1 pt due to fecal peritonitis complicated by sepsis and multi organ failure.

CONCLUSION:

The study observes the frequency of indications and complications in 50 patients presented to al-ribat university hospital. The commonest indication was the Hirschsprungs disease and the prolapse was the largest complication group observed in these children. Nevertheless, no significant mortality reports were observed (2%).

Surgical training in pediatric colostomy must be improved for better outcome. The construction and the closure of colostomy should not be taken as a minor procedure and should be done by/under supervision of the most senior personnel.

A prompt postoperative care is essential, and parent education is of paramount importance to minimize colostomy morbidity.

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